

Pre-Algebra In-Class Review Assignment (Out of 35)

Name: _____

Period: _____

Due Date: Oct. 14

Modelling Polynomials (Value 8)

1. $-2b^2 - b + 10$

Name the coefficients _____, variable _____, degree _____, and constant term _____ of the polynomial.

2. Identify each polynomial as a monomial, binomial, or trinomial.

a) $19t$

b) $g - 4g^2 + 5$

c) $-1 + xy + y^2$

d) $4 - 11w$

3. Use algebra tiles to model each polynomial. Sketch the tiles.

a) $-5 + y^2$

b) $-3a^2 - 2a + 1$

Pre-Algebra In-Class Review Assignment (Out of 35)

Name: _____

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Modelling Polynomials (Value 8)

1. $-2b^2 - b + 10$

Name the coefficients -2, -1, variable b, degree 2, and constant term 10 of the polynomial.

2. Identify each polynomial as a monomial, binomial, or trinomial.

a) $19t$

b) $g - 4g^2 + 5$

c) $-1 + xy + y^2$

d) $4 - 11w$

3. Use algebra tiles to model each polynomial. Sketch the tiles.

a) $-5 + y^2$

b) $-3a^2 - 2a + 1$

-2

4

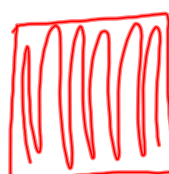
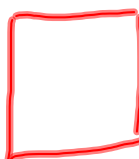
M

T

T

B

-2



Like Terms and Unlike Terms (Value 4)

4. Combine like terms.

a) $4 + x + 1 + 5x + 1 =$

b) $2x^2 + 8 - 11 - 4x^2 + 5x^2 =$

5. Write a polynomial to represent the perimeter of each rectangle.



Adding and Subtracting Polynomials (Value 4)

6. Add these polynomials. Use algebra tiles if it helps.

a) $(x - 5) + (2x + 2)$

b) $(y^2 + 6y) + (-7y^2 + 2y)$

7. Subtract.

a) $(mn - 5m - 7) - (-6n + 2m + 1)$

b) $(2a + 3b - 3a^2 + b^2) - (-a^2 + 8b^2 + 3a - b)$

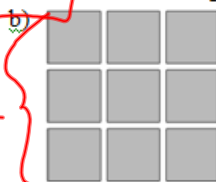
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Multiplying and Dividing a Polynomial by a Constant or Monomial (Value 19)

8. Multiply.

a) $2(3b)$

b) $-2(6h)$

c) $-2(-y^2)$

d) $4(3a + 2)$

e) $(d^2 + 2d)(-3)$

f) $-3(-5m^2 + 6m + 7)$

g) $v(3v + 1)$

h) $(-m)(7k - 3)$

i) $(-r)(-1 - 10r)$

9. Divide.

a) $12d \div 4$

b) $-20d \div 5$

c) $-10q \div -5$

d) $(16v + 16) \div (8)$

e) $(25k^2 - 15k) \div (5)$

f) $(6x + 3) \div 3$

g) $(14w - 7) \div -7$

h) $(9xy - 6x) \div -3x$

10. Write the multiplication sentence modelled by each set of algebra tiles.

a)



b)



Multiplying and Dividing a Polynomial by a Constant or Monomial (Value 19)

8. Multiply.

a) $2(3b)$ $6b$

b) $-2(6h)$ $-12h$

c) $-2(-y^2)$ $2y^2$

d) $4(3a + 2)$ $12a + 8$

e) $(d^2 + 2d)(-3)$ $-3d^2 - 6d$

f) $-3(-5m^2 + 6m + 7)$ $15m^2 - 18m - 21$

g) $v(3v + 1)$ $3v^2 + v$

h) $(-m)(7k - 3)$ $-7km + 3m$

i) $(-r)(-1 - 10r)$ $r + 10r^2$

9. Divide.

a) $12d \div 4$ $3d$

b) $-20d \div 5$ $-4d$

c) $-10q \div -5$ $2q$

d) $(16v + 16) \div (8)$ $2v + 2$

e) $(25k^2 - 15k) \div (5)$ $5k^2 - 3k$

f) $(6x + 3) \div 3$ $2x + 1$

g) $(14w - 7) \div -7$ $-2w + 1$

h) $(9xy - 6x) \div -3x$ $-3y + 2$

10. Write the multiplication sentence modelled by each set of algebra tiles.

a)



b)



$2x(2x) = 4x^2$

$x(2x + 3) = 2x^2 + 3x$

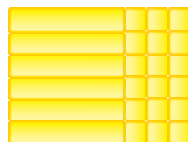
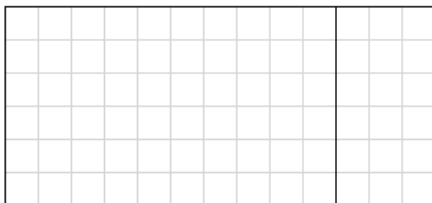
3.3 Common Factors of a Polynomial

LESSON FOCUS

Model and record factoring a polynomial.

Make Connections

Diagrams and models can be used to represent products.



What multiplication sentences are represented above?

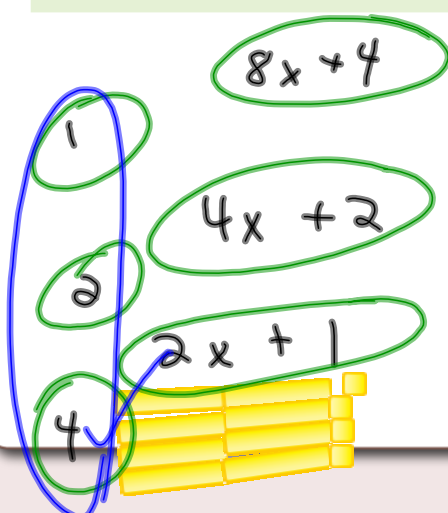
What property do the diagrams illustrate?

THINK ABOUT IT

You may need algebra tiles.

Sketch all the ways you can arrange these tiles to form a rectangle.

Beside each sketch, write the multiplication sentence it represents.

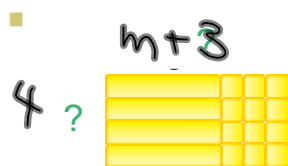
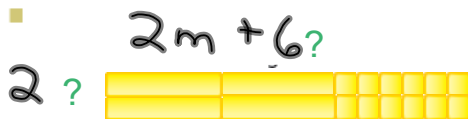
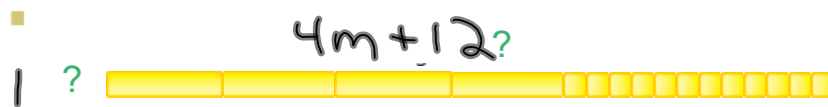


factors
of
 $8x + 4$

3.3 Common Factors of a Polynomial

Each set of tiles below represents the polynomial $4m + 12$.

The dimensions of each rectangle represent the factors of the polynomial.



?

3.3 Common Factors of a Polynomial

The factors of the polynomial $4m + 12$ are:

- $1(4m + 12)$
- $2(2m + 6)$
- $4(m + 3)$

Each pair can be multiplied to make $4m + 12$.

All are factors, however the first two are considered incomplete.

$(4m + 12)$ and $(2m + 6)$ can still be factored further

The third one is complete because $(m + 3)$ cannot be factored any further. Therefore, the greatest common factor of $4m$ and 12 is 4. You could also say that the largest number to divide evenly into $4m$ and 12 is 4 .

Expanding: $3(2 - 5a) = 6 - 15a$



Factoring and expanding are inverse processes.

Factoring: $6 - 15a = 3(2 - 5a)$

Example 1 Using Algebra Tiles to Factor Binomials

Factor each binomial.

a) $6n + 9$

b) $6c + 4c^2$

Ask yourself what is the largest number that can divide evenly in $6n$ and 9

$$= 3(2n + 3)$$

$$= 2c(3 + 2c)$$

 **SOLUTION**

$$2x^3y^2 + 10x^2y^5$$

$$= 2x^2y^2(1x + 5y^3)$$



CHECK YOUR UNDERSTANDING

